Appendix N
CAMDS SOPS

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Section I. MPF Scrubber System.

1. Preparation For Startup of MPF Scrubber System.

a. MPF Facility Safety.

(1) Ensure ACAMS and CEMS have been challenged and are operating.

(2) Ensure Operators don the appropriate Protective Clothing.

b. Establish communications with CMO and Metal Part Furnace Operator (MPFO).

c. Ensure the main power, ID fan breakers, and other appropriate power breakers are on.

d. Verify Demister Hydraulic Legs are filled with water.

e. Position valves in operating mode.

f. Adjust Panel A Instrument Panel Alarm and Control Annunciator Remote Power 12 as required. Designate Controller Set Points.

g. Turn Rotometer Water on.

h. Verify Head Tank, Caustic Tank, Clear Liquor Standpipe, Scrubber Tower Sump, and Emergency Water graphics indicates proper levels.

i. Verify ID Fan Damper Actuator is open.

j. Open Water Valve to Pressure Regulator.

k. Verify ventilation system (annunciator panels, ventilation graphics, and pressure indicators) are on line and operational.

2. Startup of MPF Scrubber System.

a. Close the Brine Flow Bypass Valve.

b. Start Seal Water Pump.

c. Set the Venturi Brine Control and setpoint.

d. CMO will start the appropriate pump (P-302, Brine Pump; P-301, Purge Pump; or P-305, Clear Liquor Pump).

f. Open the pump seal chamber inlet valve.

g. Open the drain valve and ensure the outlet valve is closed. Purge seal chamber for 10 seconds.

h. Open pump seal chamber outlet valve after seal chamber has purged for at least 10 seconds the close drain valve.

i. Open appropriate pH Probe valves

j. Adjust the Clear Liquor controller.

k. Start the Caustic pump to ensure the pressure is within operating conditions. Shut off pump.

l. Set the Demister Drain Pump to Auto. Ensure the manual valve downstream is open and air to pump is turned on.

m. Open fuel supply valves.

n. Set up initial MPF PAS setup on GS.

o. Open the manual ID Fan damper and notify CMO.

p. Start ID Fan and Varidrive®.

q. Start the Main Combustion Air Blowers.

r. Set the MPF draft control to AUTO and adjust the set point.

s. Maintain the proper flow through the Venturi.

t. Set the Scrubber Level Controller to AUTO and select the setpoint.

3. Operation of MPF Scrubber System.

a. Wash down ID Fan as required.

b. Ensure oil levels for pumps are maintained (Brine Purge Pump, Quench Brine Pump, Retention Tank Pumps, Clear Liquor Pump, Cooling Water Pump).

c. Draw a sample from the Purge Pump and Clear Liquor valves.

d. Measure and record the system pH, specific gravity. pH will be > 7 and specific gravity will be maintained between 1.000 and 1.150. If necessary, MPFO will start Caustic pump to maintain proper pH levels in the Scrubber System and/or the Clear Liquor System.

e. Inspect Retention Tank Pumps 601 and 602 and Brine Purge Pump. Record discharge pressure.

f. Inspect the Clear Liquor Pump and the Quench Brine Pump. Record discharge pressure.

g. Monitor the Venturi gas temperature to ensure it is in the range from 140 to 160° F.

h. Inspect the Demister pump.

i. Verify the Scrubber Sump level is within operating limits.

j. Record Clean Liquor Loop level on checklist.

k. Monitor liquid levels.

l. If necessary, pump liquid from the Demister to the Scrubber Sump.

(1) Set the Scrubber Make Up switch to retention tank.

(2) Open the manual outlet valve to drain the retention tank.

(3) Start retention tank pump.

(4) Observe tank level.

(5) Stop retention tank pump.

(6) Record the differential pressure across the Demister.

4. pH Probes.

a. The pH probes on both the Clear Liquor and Scrubber Brine Feed Systems are an integral part of the HW Feed Cutoff parameters. This system is strictly monitored and serviced by the CMO and MPFO to ensure State permit requirements are met.

b. Ensure the pH probes are cleaned, connected, and operating. Perform corrective maintenance as required.

c. Record the pH readings hourly. Perform corrective maintenance as required.

d. pH probes will be removed after shutdown.

5. Shutdown of Scrubber.

a. Transfer water from the sumps, Demister, or Retention Tanks to Scrubber Sump for make up water as necessary.

b. Wash down ID Fan Damper as needed.

c. Decrease Scrubber level to minimum mark on sight glass.

d. Verify MPF doors are closed.

e. Verify furnace is empty.

f. Close the fuel supply valves.

g. Record temperatures at 30-minute intervals during MPF cool-down for Zone 1, Zone 2, Primary Fume Burner gas temperature, Auxiliary Fume Burner gas temperature, and Venturi gas temperature.

h. Record temperatures at 30-minutes intervals during MPF cool-down for Door Inlet Cooling Water temperature and Door Outlet Cooling Water temperature.

i. Decrease MPF Draft Damper to approximately – 0.3%.

j. Turn ID Fan off.

k. Close Draft Dampers.

l. Ensure manual valves to Demister rinse water are open.

m. Shut down Quench Brine flow.

n. Turn on Quench Brine Pump.

o. Draw sample from the Demister monitoring port for analysis.

p. If sample results are < LOQ, Maintenance personnel can enter shutdown Demister.

q. Set Demister HAND-OFF-AUTO switch on ID Fan Local Control Panel to HAND.

r. Draw samples of brine from the Scrubber Sump and the Clear Liquor Standpipe sample valves.

s. If sample results are within WCL limits, MPFO will drain the Scrubber Sump and Standpipe. Pump the brine to the Retention Tanks or the BDA.

t. Monitor sumps and pumps for toxic indicators.

u. Run water through the Scrubber Tower, drain the water into the sumps, sample and analyze the sump liquid, and pump the liquid from the sump to a holding tank.

v. Stop Clear Liquor Pump and close Clear Liquor Controller.

w. Stop the Quench Brine Pump, close the Venturi Brine Flow Controller, and stop the Brine Purge Pump.

x. Drain the Clear Liquor Standpipe and the Scrubber Sump into Scrubber Floor Sump.

y. Fill Scrubber Sump.

z. Fill Clear Liquor Standpipe.

aa. Turn off the Seal Water Pump.

bb. Flush all Rotometers with fresh water.

cc. Remove Brine Purge strainer screens, clean, and replace.

dd. Close the Emergency Water valve.

ee. Pump Rinse Water to Retention Tank or Scrubber.

ff. Position valves as required.

gg. Wash down floors as necessary.

hh. Turn off power breakers.

Section II. MPF Startup and Operating Procedures.

MPF Operations are controlled by Operators in the Control Module and manually by Operators in the Metal Parts facility. The Primary and Secondary Combustion Chambers, Combustion Air Blowers, and Agent Air will be controlled by the Graphics System (GS) in the Control Module. Operators in the Metal Parts Facility will operate the manual valves, switches, and on-location GS controls necessary to move materials through the furnace.

1. Control Module MPF Startup Procedures.

a. Ensure LCO are met, GS is functioning, and the GS indicators display operational readings.

b. Verify the main natural gas valve is open and pressure reading is correct.

c. Start the Combustion Air Blowers.

d. Initiate the Secondary Combustion Chamber (SCC) Burners, control SCC temperature, designate Setpoints, and set operating Mode.

e. Verify Primary Combustion Chamber (PCC) valves are in Manual Mode.

g. Initiate the PCC, control PCC temperature, designate Setpoints, and set operating Mode.

2. CMO and MPFO Will Coordinate Operations During MPF Thermal Treatment of Drained Items or Contaminated Dunnage.

a. Monitor the PCC Zone 1 and 2 furnace doors to ensure they are functioning properly and within operating temperatures.

b. Observe MPF operation on GS.

3. The CMO and MPFO Will Coordinate Operations During MPF Thermal Treatment to 5X Level.

a. Set PCC Zone 1 temperature to 1400° F (the anticipated temperature).

b. Set-up trending mode to track PCC temperatures.

4. The CMO Will Ensure The Computer Recording Trend Data Is Operating As Needed.

5. The CMO and MPFO Will Coordinate Shutdown Procedures of the MPF.

a. Verify scrubber level is decreased to minimum mark.

b. Verify MPF doors are closed and the furnace is empty.

c. Turn PCC Zone 1 and 2 burners off.

d. Turn SCC Zone 1 and 2 burners off.

e. Turn the Combustion Air off.

f. Turn the main natural gas valve off.

Section III. MPF Charge Car and Discharge Car Operations.

Materials will be transferred to the MPF on a Charge Car. The MPFO will startup, load, and transfer the Charge Car into the Return Airlock. From the Return Airlock, the materials will be transferred to the MPF conveyor through the Entry Airlock. The MPFO will observe flame consistency and material processing through the MPF portal. The Charge Car will be returned to the Load Station where the MPFO will repeat the procedures. Upon completion of thermal treatment, materials will be transferred by the Discharge Car to the Cooling Station. After the materials have cooled, they will be loaded onto the Discharge Car and transferred to the Unload Station.

The Project Team will consider both the chemical agent monitoring results and the room temperatures when determining the appropriate protective clothing for Operators inside the Metal Parts facility. MPFO will strictly comply with the Two-Person Rule, confined space protocol, and emergency response procedures.

1. MPF Charge Car.

a. Start the GS and manual controls for the Charge Car.

b. Ensure MPF doors are operational. Start the hydraulic pump, ensure reservoir fluid level is within limits, and operating pressures are met.

c. Prepare HW documents for materials to be processed.

d. Verify two-way communication with CMO and Discharge Car Operator is established. CMO will verify ACAMS and DAAMS are connected and operating.

e. Load items onto Charge Car.

f. Move Charge Car into Return Airlock.

g. Unload Charge Car. Charge Car will move to the Entry Airlock and the materials will automatically process through the furnace.

h. Observe burning materials and ensure furnace flame is maintained.

i. Coordinate with Discharge Car Operator.

j. Ensure Charge Car is empty.

k. Verify all doors are closed.

l. Return Charge Car to Loading Station.

2. MPF Discharge Car.

a. Start the GS and manual controls for the Discharge Car.

b. Start Cooling Station System.

c. Upon notification from the CMO, transfer the treated materials to the Discharge Car stationed in the MPF Shroud.

d. Ensure treated materials are monitored for chemical agent. If monitor results are positive, notify CMO and return the materials to MPF Zone 2.

e. Using the Discharge Car, transfer treated materials to Cooling Station 1 or 2.

f. Unload treated materials from the Cooling Station onto the Discharge Car and move to the Unload Station.

g. Unload treated materials.

h. Complete HW tracking documentation.